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ERTS 1 PROPOSAL NMC No. 204
CONTRACT NO. NAS5-21747

Title: "To Map the Distribution of Glaciofluvial Deposits and Associated Glacial Landforms"; GSFC ID ST 354

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Problems: No ERTS imagery of the 20 September orbit over Maine has been received to date. This should be some of the best cloud-free satellite imagery obtained to date, and will be an invaluable source of data when combined with the excellent support mission and contract underflight photographs obtained on the same day.

Retrospective orders for color composite products of the 1 September MSS imagery sent to the Technical Monitor 6 November have not been filled to date (See Attachments). It is anticipated that ERTS color composites, an image type not yet made available for study, will be necessary to the final completion of the contract proposal.

Accomplishments: A quantity of satellite imagery and U-2 support mission photography has been received since the last reporting period, much of which is virtually cloud-free and of very good quality. Of all ERTS imagery received to date, those of the 1 September 'B' orbit, received 3 November, are the only cloud-free images. These have been studied in some detail, and several experimental enlarged prints have been made from select portions of the MSS band 7 negative and some of the positive transparencies. Various enlargements have also been made from cloud-free portions of other ERTS images received previously.

U-2 support mission coverage of a small portion of the southwestern portion of the state flown 27 April was received 1 September and proved to be too cloud-covered to be of much use. Coverage of about 500 linear miles flown in four Vinten sensor bands 20 August was received 6 September. Cloud cover in these photographs is excessive in the southern portion of the state

and 10% or less in some of the northern frames. Inspection has been made of the color infrared frames having 50% cloud cover, however, and they are also usable, for certain comparison purposes. On 20 September a U-2 support mission flew about 500 linear miles of photo coverage in the same corridor as previous missions. Four spectral bands of 70 mm transparencies in the Vinten system and RC-10 Aerochrome Infrared in 9" transparency format were obtained. The 3 bands of Vinten black and white were received 18 November, the RC-10 color was received 2 December, and the Vinten aerochrome Infrared was received 26 December. All of this 20 September coverage is virtually cloud-free and of excellent quality. Study of this photography and the 1 September ERTS imagery is currently in progress. Comparison studies with larger scale contract underflights of select test areas flown 20 September are included in the on-going study.

A convenient filing and cross-filing system currently in use is being further developed and enlarged upon as various image types are received.

Various enlargements have been made from 70 mm positive and negative transparencies, and slides for projection studies and comparisons have been made.

Limited on-going use of the Bausch and Lomb "Zoom 95" stereoscope has been made for areal spot comparisons. Overall viewing of ERTS imagery, underflight photography and the 9" RC-10 transparencies has been generally accomplished by use of the Old Delft scanning stereoscope and light table.

Continuing study of all imagery currently on band, and study and comparison of color composites and imagery received in the next few weeks is planned for the next reporting period.

Plans are presently being formulated to use ERTS transparencies for producing enhanced images by a color additive process, using electronic and computer techniques. A list of descriptors will be compiled for the three

cloud-free scenes now available, and for any cloud-free scenes that may be received in the future.

Copies of retrospective Data Request forms submitted to GSFC/NDPF during the reporting period are attached.